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ABSTRACT

The Union Internationale des Associations des Guides de Montagne's (UIAGM) rope handling techniques are intended to form the standard for guiding ropework worldwide. These techniques have become the legal standard for instructional institutions and commercial guiding organizations in UIAGM member countries: Austria, Canada, France, Germany, Great Britain, Japan, Italy, New Zealand, Norway, Peru, and Switzerland. An application for the United States to become a member country is currently in process. Anchors are intended to protect the guide and client from falling if all else fails. The two categories of anchors are described, along with construction of anchors, arrangement of ropes and slings, and the master point of attachment. The ropes methods used by guides are related to those of climbers, skiers, and mountaineers in regular climbing. However, modifications to technique and application often vary from nonguided climbing. Such modifications are discussed for short-roping, end-roping, top-roping, and rappelling. Guides seldom use emergency and rescue techniques, but when they are needed, the response must be fast and efficient to prevent an accident from escalating. A rescue in the vertical environment is described as a series of load transfers. Includes illustrations and six sample problems in rope handling. (SV)

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UIAGM ROPEHANDLING TECHNIQUES

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ABSTRACT
The Union Internationale des Associations des Guides de Montagne's (UIAGM) standard ropehandling techniques are intended to form the standard for guiding ropework worldwide, and in UIAGM member countries, has become the legal standard for instructional institutions and commercial guiding organizations. This session is intended to discuss and demonstrate selected UIAGM ropehandling techniques as applies to these organizations.

THE UIAGM
The Union Internationale des Associations des Guides de Montagne (UIAGM)is an international body that sets the standards for professional mountain guides worldwide.The following countries are members of the UIAGM: Austria, Canada, France, Germany, Great Britain, Japan, Italy, New Zealand, Norway, Peru, Switzerland. The American Mountain Guides Association has made application to the UIAGM for the United States to become a member country and this application is in the process of development.

As the legal body for qualifying guides within its member countries, non UIAGM guides are restricted access to many activities within these countries. As the worldwide standard setting body, UIAGM ropehandling techniques are important guidelines for instructional institutions and guiding organizations to consider - as they are the overriding legal norms in member countries.

ANCHORS
Anchors create a protection arrangement intended to hold any load that could potentially be created in a given situation. Essentially if all else goes wrong and everything in the protection scheme fails, the anchor is there to prevent the guide and client from falling off the route.

Categories: Anchors can be categorized into two classes. Simple anchors are those that are intended to hold loads in one direction. Only unidirectional anchors are needed to build simple anchors. Complex anchors are those intended to hold loads in more than one direction. At least one of the pieces of protection used to create a complex anchor must be multidirectional.

Construction and Arrangement: The placements used in multi point anchors can be oriented horizontally to one another or vertically. Vertical orientations more effectively distribute loads as the angle of the connecting slings is less. All sling angles within an anchor system should be less than 120 degrees and ideally less than 90 degrees.

Connecting the individual pieces of protection together into an anchor is generally done with slings rather than the rope when guiding. This allows the guide to easily adjust from belaying the client to leading without any changes to the configuration of the anchor. Guides carry two - five meter long 7mm slings for connecting anchor protection pieces together.

By using individual slings or by tying a single long sling together at a main point, pieces are joined independently. This is the preferred method of building an anchor. Independent connection is an advantage when one placement in the anchor is distinctly inferior to the other(s). With this method of connection the failure of one piece affects the others as little as possible. The disadvantage of independently connected placements is that load distribution is easily compromised if the direction from which force is applied shifts.

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Using a single long sling, a load distributing connection can be made. This connection will distribute loads to the placements through a range of motion and thus maintains distribution if the forces shift. However if one piece fails, the belay will be dropped as the sling extends.

Master Point of Attachment: In guiding, anchors are most effective when arranged in such a way that all placements connect to one common "master" point. A common point reduces confusion and binding and provides an attachment point for rescue systems should they be required. Normally, all belays or tie ins are secured to the master point.

GUIDING TECHNIQUES

The methods used by guides are related to those of climbers, skiers and mountaineers in regular climbing. However, modifications to technique and application often varies from non-guided climbing.

Shortroping: In guiding, the option of moving unroped seldom exists. The guide must be on the rope with the client(s) to secure them in case of a slip or fall even when moving together. The use of the rope to move together under such circumstances is called "shortroping." Shortroping is as much a way to control the client as it is a technical skill.

Endroping: When it is no longer safe to move together or climb short difficulties by shortroping, the guide uses techniques that more resemble those used by climbers on technical ground. One or two clients are tied to the end of the rope - or on two ropes if using double or twin ropes - and the clients are belayed using anchors and belay techniques appropriate to the situation. Endroping is a much simpler procedure than shortroping.

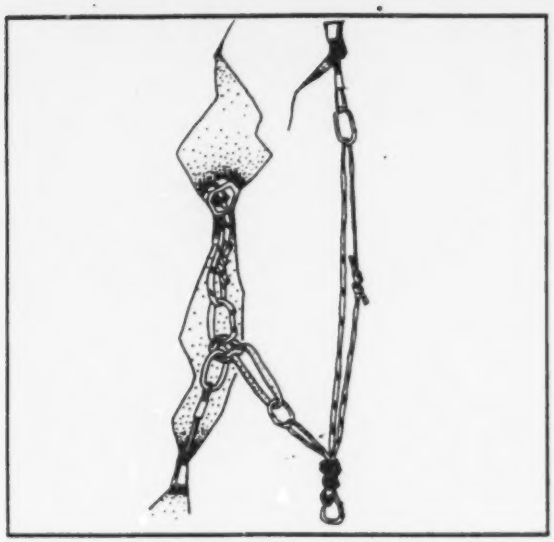
Top Roping: Top roping techniques are used primarily when instructing. By setting a top rope, the guide is able to instruct and coach more efficiently on shorter routes with better proximity to the client. It is also possible for the guide to supervise more than one top rope at a time if ropes are set up relatively close together. Top ropes can be set up in two configurations, top belayed and bottom belayed (slingshot).

Rappelling: Generally, it is preferable for clients to be lowered by the guide, although in some situations, it is appropriate for the client to rappel. All clients should be belayed when rappelling. This can be with a separate rope, one end of a doubled rope, or if the guide rappels first through a bottom belay. Rappels normally occur in three formats: the client rappels first, the guide rappels first, or pair rappels (where guide and client rappel simultaneously).

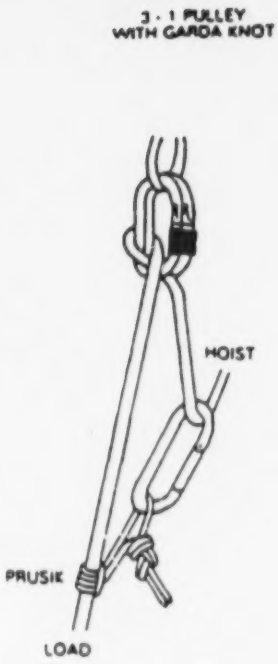
RESCUE SYSTEMS

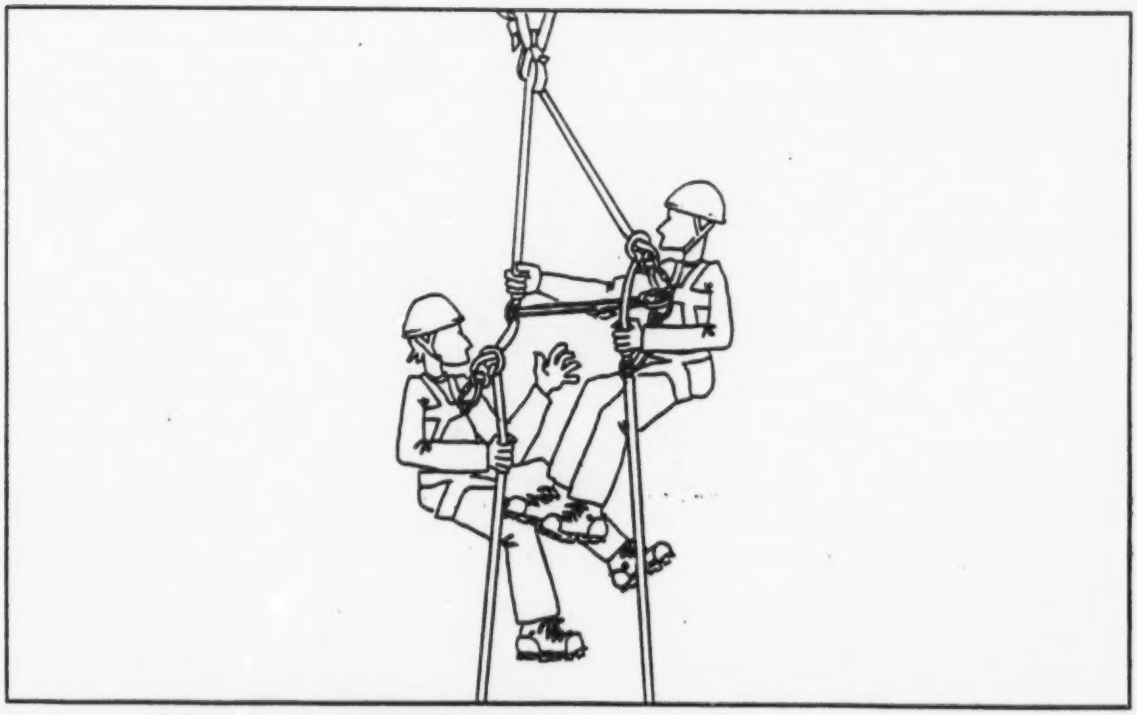
Emergency response and rescue situations require quick, innovative, flexible thinking and a clearheaded, calm approach to potentially complex problems. If working alone, the guide must be prepared to create a solution entirely without help. Guides seldom use emergency and rescue techniques, but when they are needed the response must be fast and efficient to prevent an accident from escalating.

A simple way to look at rescue in the vertical environment is as a series of load transfers. These load transfers shift the weight off the belay system to the anchor, then to friction systems for lowering or pulley systems for raising. If problems develop, the load is transferred back to the anchor so the problem can be rectified or the system modified. It is necessary to anticipate potential problems and have a system flexible enough that it is possible to reverse the load transfer process. There are five primary steps in any improvised rescue scenario: arrest the fall, block the belay to free the hands, transfer the load from the belay to the anchor, create a lowering or raising system, and transfer the load to the lowering/raising system.

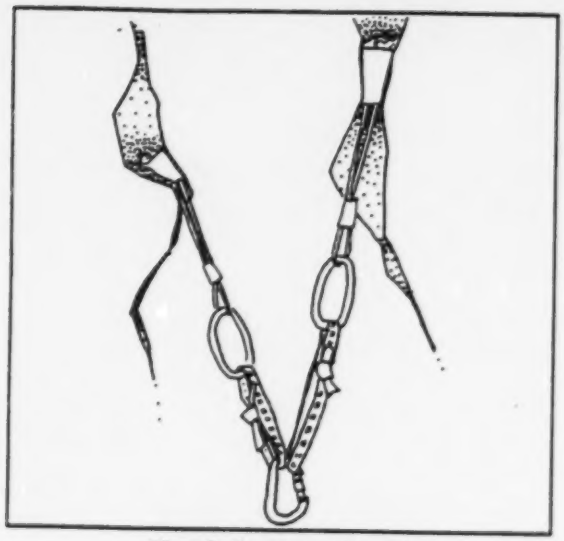


Independent connection of complex anchor. Oppositioned pieces of protection used for multidirectional component.



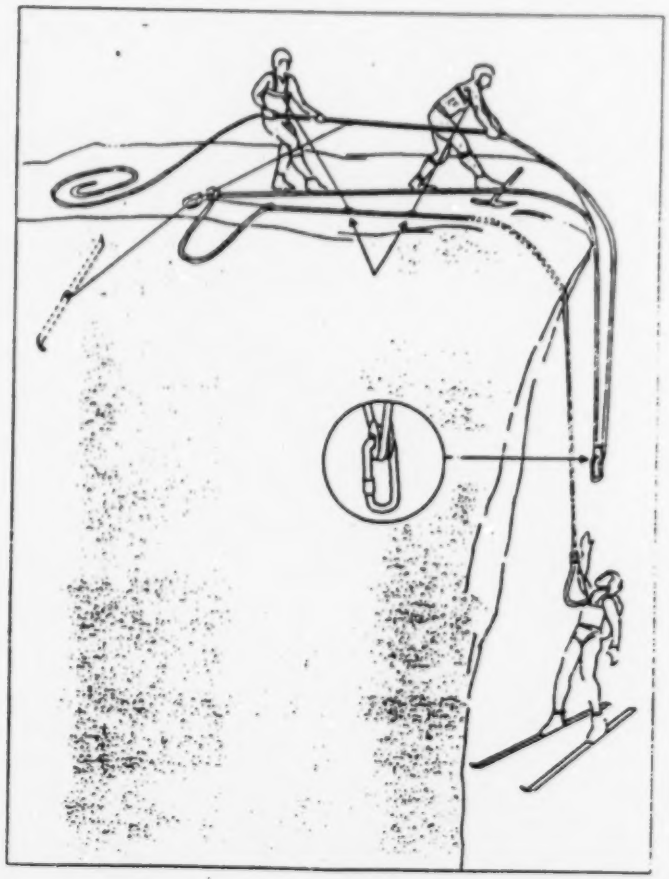


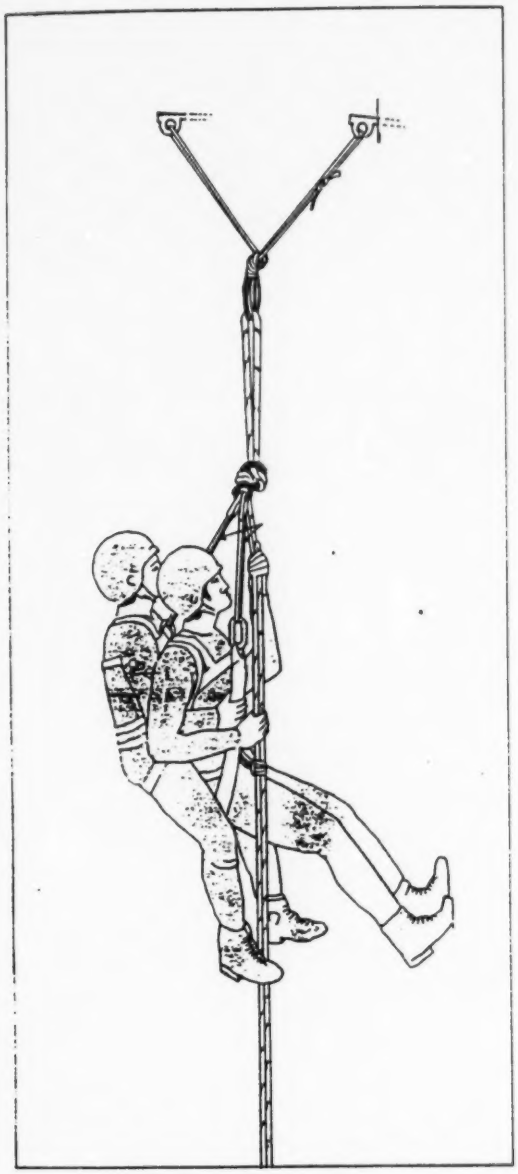
Guide and client rappelling as a pair

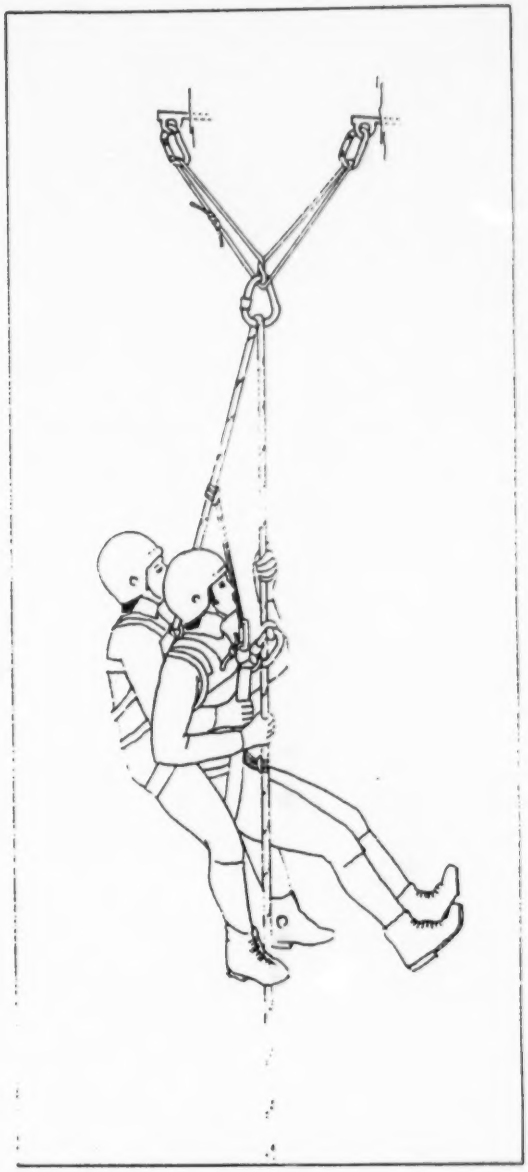


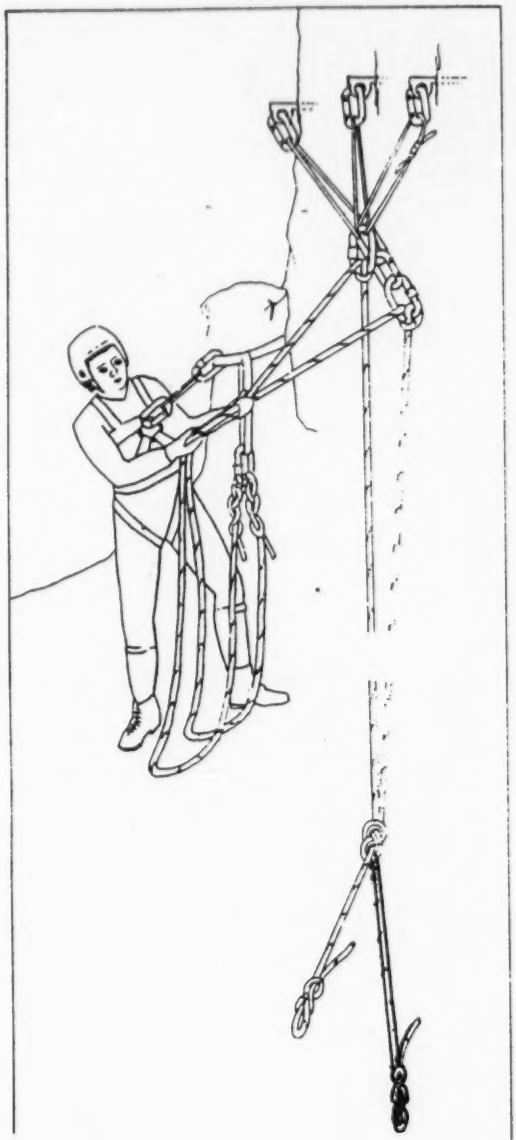
Simple horizontal anchor.
Independently connected with 2 slings.

Simple vertical anchor.
Independently connected with 1 sling.









a

b

crevasse rescue

Credits: All text and drawings are from the Canadian, French and German UIAGM Guide's Manuals.

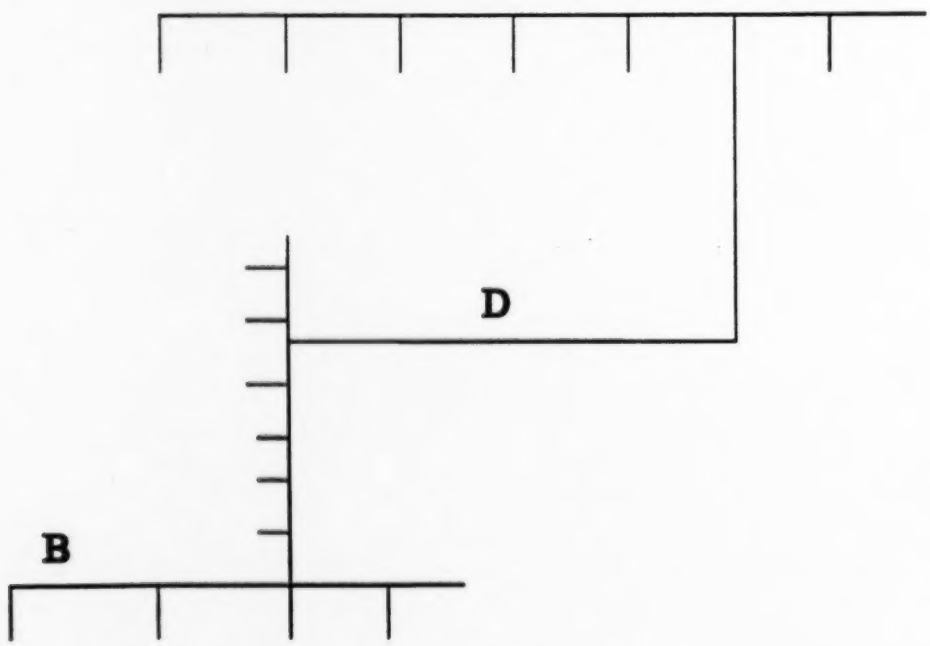
ACMG ROPEHANDLING PROBLEMS

For each of the following problems, place protection, anchors and belays that are best for the client. Sketch and/or discuss the best solution(s) to the problems with reference to:

- Rope management
- Line of travel for guide and client
- Client care, management and safety

x = fixed piece of protection
D = difficult move
B1 = starting point (belay)
B2 = ending point (belay)

Problem #1
You have 1 rope.
GE to get from B1 to the upper ledge will take 40 m of rope.
Place the next belay on the upper ledge.



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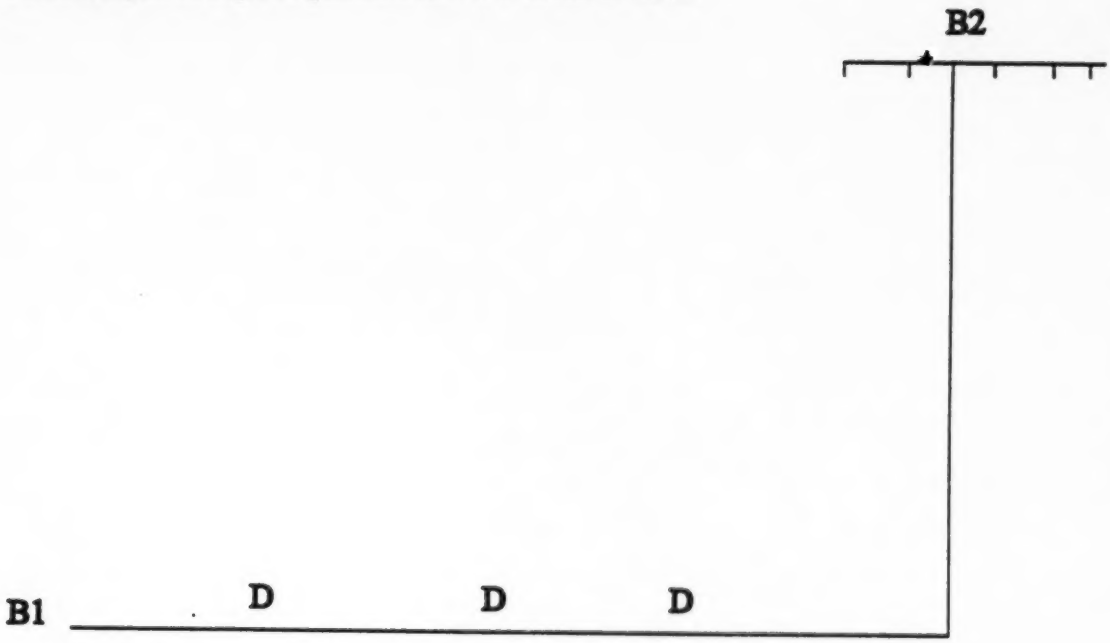
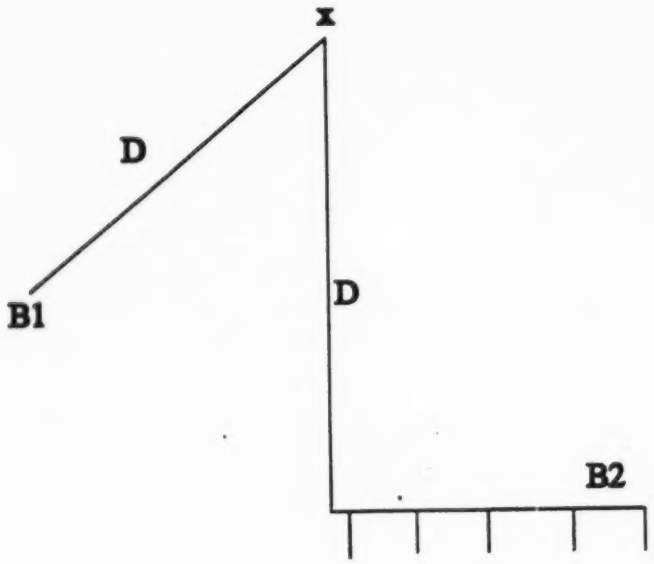
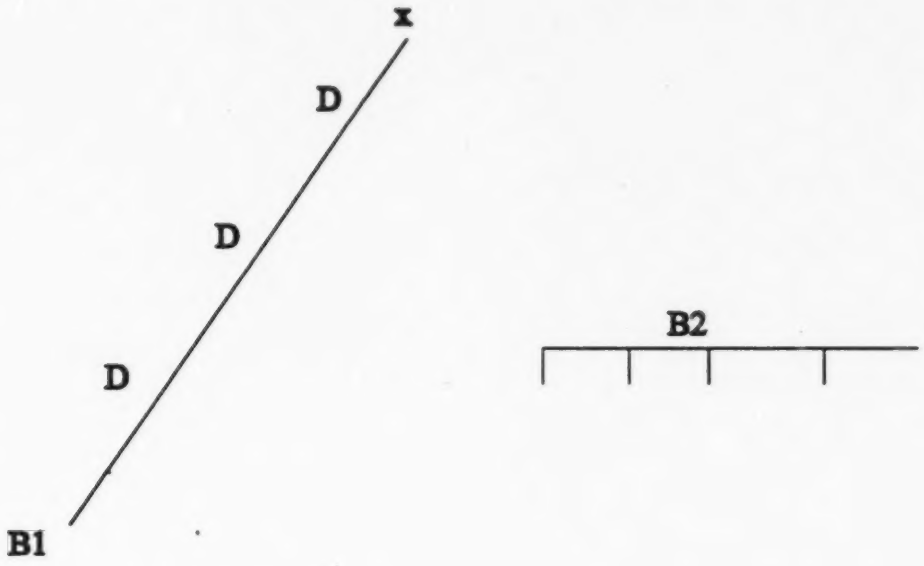
Problem #2
You have 1 rope
Total length of rope required from B 1 to B2 is 15 m



Problem #3
You have 1 rope
It will take 20 m of rope to get from B1 to B2
There are at least 2 good solutions



Problem #4
You have 1 rope
It will take 35 m of rope to get from B1 to B2
The area below and to the right of the fixed pro is not climbable



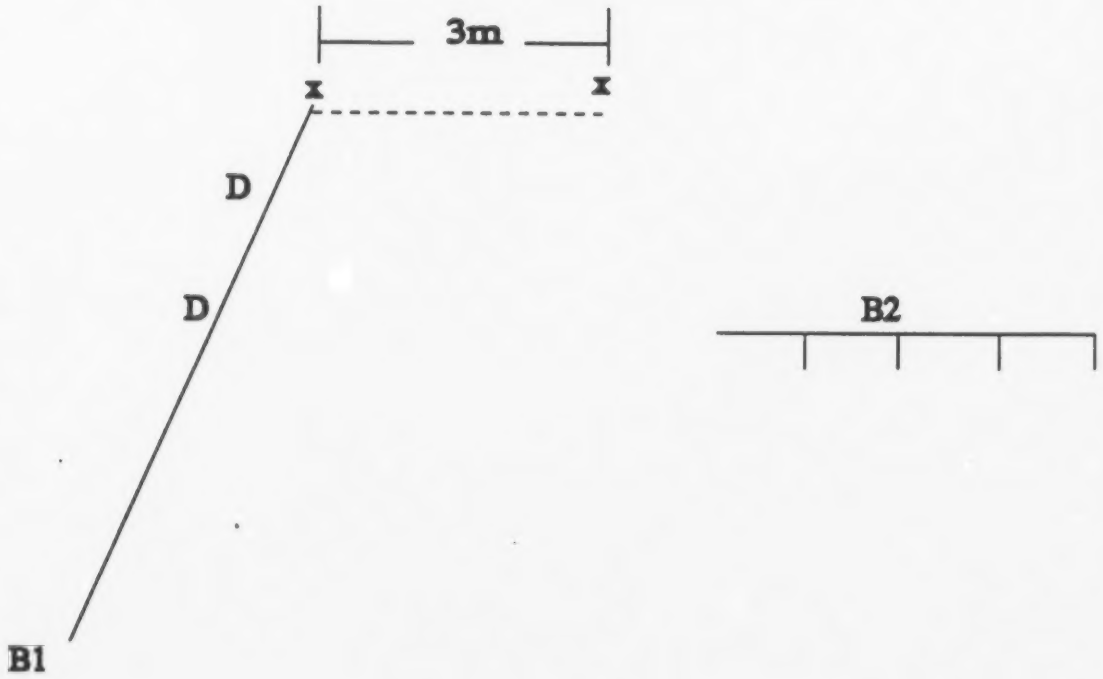
Problem #5

You have 1 rope

It takes 20 m of rope to get from B 1 to B2

The client is not able to climb beyond the first fixed pro

The area below and to the right of the fixed pro is not climbable.



Problem #6
You have 2 ropes, 2 guides and 6 clients
You can get pro wherever you want
The ledge is easy but downsloping, wet and slippery
No anchors or belays are required for the clients once they are on the ground.
Speed is important but not overruled by safety
The area below the ledge is unclimbable
From the right end of the ledge to the ground is climbable by the guides but not by the clients.